DEFENDERS OF WILDLIFE – EARTHJUSTICE
NATURAL RESOURCES DEFENSE COUNCIL – HEALTHY GULF

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July 6, 2023

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NMFS, Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

RE: Comments on the petition for rulemaking to establish a year-round 10-knot vessel speed limit and other vessel-related mitigation measures in Rice's whale habitat

Dear Mr. Bernhart:

Thank you for the opportunity to comment on the petition to the National Marine Fisheries Service ("NMFS") for rulemaking to establish a year-round 10-knot vessel speed limit and other vessel-related mitigation measures in habitat for the Gulf of Mexico ("Rice's") whale.[1]

Our organizations submitted the original petition to NMFS,[2] and we write in strong support of the agency moving forward with proposed rulemaking. Limiting vessel speeds to ten knots or less in Rice's whale habitat, and implementing other vessel-related measures, would have immediate, tangible benefits for the species by reducing the risk of vessel collisions—one of the major impediments to its recovery—and lessening the degradation of acoustic habitat and the chronic individual effects that stem from exposure to vessel noise.

At the same time, we acknowledge that significant new scientific information on Rice's whale habitat use and vessel strike risk has become available since the petition was originally submitted in May 2021. In this letter, we summarize the new information and submit an update to our original recommendations, so that any forthcoming proposed rulemaking moves forward in a

[1] 88 Fed. Reg. 20,856 (Apr. 7, 2023).

[2] Natural Resources Defense Council, Healthy Gulf, Center for Biological Diversity, Defenders of Wildlife, Earthjustice, and New England Aquarium, "Petition to establish a mandatory 10-knot speed limit and other vessel-related mitigation measures for vessel traffic within the core habitat of the Gulf of Mexico whale (*Balaenoptera ricei*)" (submitted to NMFS on May 11, 2021) (https://www.fisheries.noaa.gov/s3/2023-03/Rices-Whale-Petition.pdf).

manner reflective of best available science. We also present several considerations related to the implementation of the proposed mitigation measures, specifically related to the size class of vessels that would be subject to regulation, and to the prohibition on nighttime vessel transits through the Rice's whale habitat area.

I. Updates on the conservation status of Rice's whale and the relative risk posed by vessels

Recently determined to be a new and distinct species,[3] Rice's whale (*Balaenoptera ricei*) is counted among the most endangered marine mammal species in existence. The best estimate of abundance for Rice's whales is 51 (CV=0.50) individuals, and the minimum population estimate for the species is 34 individuals.[4]

The potential biological removal ("PBR") level for the species is presently calculated as 0.068,[5] meaning that only a single Rice's whale can be killed or seriously injured by any human activity approximately every 15 years if the species is to begin to recover. Deaths (detected and undetected) resulting from vessel collisions are highly likely to exceed this number, adding to the mortalities incurred from the *Deepwater Horizon* spill; and Rice's whale faces myriad other anthropogenic threats including the curtailment of habitat due to oil and gas development, oil spills and oil spill response, anthropogenic noise, marine debris including plastic pollution, and potential fisheries interactions, as well as cumulative and synergistic effects.[6] Last fall, a group of 100 marine scientists called on the administration to take significant action for the conservation of the species, noting in particular the threats posed by vessel collisions and offshore oil and gas activities.[7]

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[3] Rosel, P.E., Wilcox, L.A., Yamada, T.K. and Mullin, K.D., "A new species of baleen whale (Balaenoptera) from the Gulf of Mexico, with a review of its geographic distribution," Marine Mammal Science, vol. 37, pp. 577-610 (2021) (https://doi.org/10.1111/mms.12776) (providing strong genetic and morphological evidence for identification of the whale as a unique species). Since our petition was filed, the whale has been classified as a species by the Taxonomy Committee of the Society of Marine Mammalogy, whose findings carry authoritative weight in the field; by NMFS, through amendment of its endangered species listing; by the Scientific Committee of the International Whaling Committee, in its formal recommendations; and by the IUCN, through reclassification of the species in its Red List of Threatened Species, where Rice's whale is characterized as critically endangered.

[4] Draft 2022 Marine Mammal Stock Assessment Reports for the Atlantic, Gulf of Mexico, and Caribbean Region at p. 137 (https://www.fisheries.noaa.gov/s3/2023- 01/Draft%202022%20Atlantic%20SARs_final.pdf) ("Draft SAR").

[5] We recommend that the agency round PBR to 0.07, as per the 2023 Guidelines for Preparing Stock Assessment Reports Pursuant to the 1994 Amendments to the Marine Mammal Protection Act. The Guidelines call for reporting PBR to two decimal places for stocks like Rice's whale whose PBR level is calculated to be equal to or less than 1. See NMFS, "2023 Guidelines for Preparing Stock Assessment Reports Pursuant to the 1994 Amendments to the Marine Mammal Protection Act," at p. 32 (2023) (https://www.fisheries.noaa.gov/s3/2023-03/02-204-01-Final-GAMMS-IV-Revisions-clean-%281%29_kdr.pdf).

[6] Rosel, P.E, et al., 2021, *supra* (citing Rosel, P.E., Corkeron, P.J., Engleby, L., Epperson, D., Mullin, K., Soldevilla, M.S., and Taylor, B.L., "Status review of Bryde's whales (*Balaenoptera edeni*) in the Gulf of Mexico under the Endangered Species Act" (2016) (NOAA Tech. Memo. NMFS-SEFSC-692)); and Soldevilla, M.S., Hildebrand, J.A., Fraser, K.E., Dias, L.A., Martinez, A., Mullin, K.D., Rosel, P.E., and Garrison, L.P., "Spatial distribution and dive behavior of Gulf of Mexico Bryde's whales: Potential risk of vessel strikes and fisheries interactions," Endangered Species Research, vol. 32, pp. 533-550 (2017).

[7] P. Corkeron et al., "An Open Letter to the Biden Administration" (2022) (attached as an exhibit to this letter).

Interactions with vessels are a substantial concern due to the direct risk of injury and mortality. Soldevilla et al. (2017) reviewed the potential risks of vessel strikes and fisheries interactions to Rice's whale, noting that vessel strikes could be an important source of mortality for the species.[8] The NMFS Draft 2022 Stock Assessment Report for Rice's whale acknowledges that vessel strikes pose a threat to the stock, based on evidence from a necropsy of a whale found stranded in 2009 and the 2019 sighting of a free-swimming whale exhibiting signs of a previous vessel strike injury.[9]

Science indicates that the majority of vessel strikes of large whales may go undetected,[10] and this is likely to be even more true for a species with a small population size that resides in offshore areas with relatively little monitoring effort, like Rice's whale. If detected and undetected deaths are accounted for, vessel strikes alone are highly likely to exceed the species' PBR level of one individual every 15 years. Indeed, in accounting for detected and undetected deaths in the years between 2002 and 2018, NMFS estimated that Rice's whales were fatally struck at an annual rate of 1.18,[11] a rate that is itself about 17 times above the current PBR.

Analysis of dive behaviors indicates the whale may spend a considerable amount of time at night within the upper 15 meters of the water column, within the draft depths of most commercial vessels.[12] Such behavior significantly raises the risk of vessel strikes.[13] Mothers and calves of a number of large whale species have been observed to spend relatively more time at shallower depths;[14] as Rice's whales reside in a relatively limited habitat area year-round, it can be assumed that mothers and calves are present and therefore at particular risk.

In addition, the degradation of the species' acoustic habitat from vessel noise is likely to disrupt vital behaviors such as feeding and breeding, and the chronic stress associated with noise exposure may impair individual health and fitness. A recent passive acoustic study observed that, on numerous occasions, Rice's whales exhibited a cryptic vocalization behavior in which they stopped producing calls when a survey vessel began approaching them. They did not start calling again until the vessel had turned away or passed their last known location, remaining silent for

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[8] Soldevilla et al., "Spatial distribution," *supra*.

[9] Draft SAR at 141.

[10] Pace III, R. M., Williams, R., Kraus, S. D., Knowlton, A. R. and Pettis, H. M, "Cryptic mortality of North Atlantic right whales," Conservation Science and Practice, art. e346 (2021).

[11] NMFS, Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico (2020), at p. 358.

[12] Soldevilla et al., "Spatial distribution," *supra*.

[13] *Id.*

[14] *See, e.g.*, Cusano, D.A., Conger, L.A., Van Parijs, S.M. and Parks, S.E., "Implementing conservation measures for the North Atlantic right whale: considering the behavioral ontogeny of mother-calf pairs." Animal Conservation, vol. 22, pp. 228-37 (2019); Pack, A.A., Waterman, J.O. and Craig, A.S., "Diurnal increases in depths of humpback whale (*Megaptera novaeangliae*) mother-calf pods off West Maui, Hawai'i: A response to vessels?" Marine Mammal Science, vol. 38, pp. 1340-56 (2022); Zeh, J.M., Dombroski, J.R. and Parks, S.E., "Preferred shallow-water nursery sites provide acoustic crypsis to southern right whale mother–calf pairs." Royal Society Open Science, vol. 9, art. 220241 (2022).

30-60 minutes in duration.[15] This is a strong response to vessel noise and activity relative to what is known for baleen whale species, and it further supports the petition's recommendation for a vessel speed limit. A newly published paper confirms the results observed in various habitats subject to vessel slowdowns: that, for large commercial ships, speed reductions significantly reduce the duration and magnitude of noise exposure in marine mammals, even when longer transit times are taken into account.[16]

II. New information on the importance of implementing vessel strike risk-reduction measures in Rice's whale habitat in the central and western Gulf

Our petition called on NMFS to establish vessel measures within an area "bounded by the 100-m and 400-m isobaths from approximately Pensacola, FL, to just south of Tampa, FL (*i.e.*, from 87.5° W to 27.5° N) plus an additional 10 km around that area."

In the two years since our petition was submitted, NOAA completed its five-year study of the species' habitat, entitled "Trophic Interactions and Habitat Requirements of Gulf of Mexico Rice's Whales." The study was designed to develop "a comprehensive ecological understanding" of the whales' habitat use by integrating research along multiple lines. In relevant part, the effort included photo-identification and mark-recapture analyses to help determine the size and site-fidelity of the population, tagging of individual whales to understand their foraging behavior, sampling of both the whales' fecal matter and the prey composition of the area they forage, monitoring of potential habitat with passive acoustics, mapping of the distribution of the whales' prey, and determination of the oceanographic features associated with their habitat.[17] A detailed overview is available on NOAA's website.[18]

Several of the study's components have already been published, and at least one other is pending publication. Together and individually, these multiple lines of evidence strongly support the identification of habitat extending from the upper depths of the De Soto Canyon along the continental shelf break, between the 100 and 400m isobaths, through waters off Louisiana and Texas. As discussed below, this new information compels us to modify the recommendations set forth in our original petition to include additional shelf-break habitat.

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[15] Soldevilla, M.S., Ternus, K., Cook, A., Hildebrand, J.A., Frasier, K.E., Martinez, A. and Garrison, L.P., "Acoustic localization, validation, and characterization of Rice's whale calls," Journal of the Acoustical Society of America, vol 151, pp. 4264-4278, at p. 4275 (2022) (https://doi.org/10.1121/10.0011677).

[16] Findlay, C.R., Rojano-Doñate, L., Tougaard, J., Johnson, M.P., and Madsen, P.T. "Small reductions in cargo vessel speed substantially reduces noise impacts to marine mammals." Science Advances, vol. 9, art. eadf2987 (2023).

[17] NOAA RESTORE Science Program, "Trophic Interactions and Habitat Requirements of Gulf of Mexico Rice's Whales," available at restoreactscienceprogram.noaa.gov/projects/rices-whales (accessed Jun. 2022); NOAA Fisheries, "Trophic Interactions and Habitat Requirements of Gulf of Mexico Rice's Whales," available at https://www.fisheries.noaa.gov/southeast/endangered-species-conservation/trophic-interactions-and-habitat-requirements-gulf-mexico (accessed Jun. 2022).

[18] *Id.*

a. New data on habitat use and habitat features

The persistent occurrence of Rice's whales in the northwestern Gulf of Mexico has recently been documented, in one component of the five-year study, through the use of passive acoustics, with hydrophones placed at multiple survey sites along the shelf break (Soldevilla et al. 2022).[19] Vocalizations were detected as frequently as one in every six days sampled at the westernmost survey site (Flower Garden West), with no obvious evidence of seasonality. These findings, although significant, are likely to underestimate the frequency of Rice's whale calling in the northwestern Gulf, since background noise from shipping traffic and seismic surveys around the three westernmost survey sites may have reduced the detection distance of calls by 50% and the area sampled by 75%.[20] Notably, the authors of the study stated the new information was of a level of significance that "will be important to consider when designating critical habitat for this endangered species."[21]

The shelf-break habitat identified through passive acoustic monitoring of the whales matches the habitat features identified, in another component of the five-year study, as essential to Rice's whale foraging. Using a trawl, researchers sampled aggregations of prey at water depths and locations used by the whale for feeding; and they supplemented these data with staple isotope and energy density analyses, based on skin biopsies, to determine the whale's primary prey.[22] They concluded that Rice's whale is a selective predator, focused on aggregations of certain high-energy content fish—and primarily of a schooling fish known as *Ariomma bondi*, with lesser contributions from several other small fish and squid.[23] Both historical catch records and near-bottom trawling data shows *A. bondi* favoring the same shelf-break habitat throughout the northern Gulf of Mexico where the whales have been shown to persistently occur.[24]

This evidence is further complemented by newly available (Farmer et al. 2022)[25] and forthcoming habitat suitability analyses from NOAA, both of which indicate an extension of the whale's habitat between the 100m and 400m isobaths across the northwestern Gulf.

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[19] Soldevilla, M.S., Debich, A.J., Garrison, L.P., Hildebrand, J.A. and Wiggins, S.M., "Rice's whales in the northwestern Gulf of Mexico: call variation and occurrence beyond the known core habitat," Endangered Species Research, vol. 48, pp. 155-174 (2022) (https://doi.org/10.3354/esr01196).

[20] *Id.* at 171.

[21] *Id.* at 172.

[22] Kiszka, J.J., Caputo, M., Vollenweider, J., Heithaus, M.R., Dias, L.A., and Garrison, L.P. "Critically endangered Rice's whale (*Balaenoptera ricei*) selectively feed on high-quality prey in the Gulf of Mexico." Scientific Reports, vol. 13, art. 6710 (2023).

[23] *Id.* at 10.

[24] *Id.*

[25] Farmer, N.A., Powell, J.R., Morris, Jr., J.A., Soldevilla, M.S., Wickliffe, L.C., Jossart, J.A., MacKay, J.K., Randall, A.L., Bath, G.E., Ruvelas, P., Gray, L., Lee, J., Piniak, W., Garrison, L., Hardy, R., Hart, K.M., Sasso, C., Stokes, L., and Riley, K.L., "Modeling protected species distributions and habitats to inform siting and management of pioneering ocean industries: A case study for Gulf of Mexico aquaculture," PLoS ONE, vol. 17, art. e0267333 (2022). This paper was not undertaken as part of the five-year study, but made use of some of the data it acquired.

NOAA's five-year study was specifically intended to "contribute directly to the development of restoration plans, recovery plans, and environmental impact analyses that are key to the effective conservation of Gulf of Mexico Rice's whales."[26] And indeed, its findings have already been used for these purposes. The agency underscored the study in commenting to BOEM last year on wind energy area designation in the Gulf of Mexico. It recommended that no offshore wind leasing or development occur "within the boundaries of the currently known distribution of Rice's whales in the western and central GOM" (i.e., the 100-400m isobaths),[27] and BOEM completely excluded the area from leasing.[28] It is clear that important habitat for the species exists outside the DeSoto Canyon.

b. Relative risk of vessel strike inside and outside the DeSoto Canyon habitat area

Rice's whales stand at greater risk of ship-strike outside their DeSoto Canyon habitat than inside it.

That relative risk was explored in the Biological Opinion that NMFS issued for Gulf oil and gas development in 2020.[29] To assess strike risk for the species, the agency divided the Gulf into 10-kilometer grid cells, then multiplied the expected abundance of Rice's whales in each cell (based on density information that preceded the five-year NOAA study) by the total distance traveled by all vessels within that cell (based on Automatic Identification System data).[30] The product of whale abundance and transit distances represented the risk attributable to each cell. While the agency focused on the particular risk presented by oil and gas industry vessels, it also provided risk numbers for the broader universe of vessels transiting through Rice's whale habitat, as well as through the whale's DeSoto Canyon habitat standing alone,[31] which we have reprinted below in Table 1, columns B and C. This analysis indicates that the strike risk attributable to vessels transiting *outside* the DeSoto Canyon habitat area is, on average, *about two-thirds of the total* (Table 1, column E). This distribution of risk is almost certainly due to the greater number of vessel transits through the whale's shelf-break habitat outside the Canyon.

[26] NOAA RESTORE Science Program, "Trophic Interactions and Habitat Requirements," *supra.*

[27] *Id.*

[28] Memorandum from M. Celata, Regional Director for BOEM Gulf of Mexico Regional Office, to Amanda Lefton, BOEM Director, at 12-13, 34 (July 20, 2022) (request for concurrence on Preliminary Wind Energy Areas for the Gulf of Mexico).

[29] NMFS, Biological Opinion, 2020, *supra.*

[30] *Id.* at 347-48.

[31] As defined in the Biological Opinion, the DeSoto Canyon habitat area subsumes the 100-400 habitat area, but includes a buffer zone to account for uncertainty. This definition is based on NMFS' 2016 Status Review of Rice's whale.

Table 1. Strike risk for Rice's whales associated with all AIS-reported vessels transiting at all speeds through their habitat, based on data in NMFS' 2020 Biological Opinion

Year	Risk, all Rice's whale habitat[a]	Risk, DeSoto habitat area[b]	Risk, outside DeSoto habitat area[c]	% risk, outside DeSoto habitat area
2015	54,454	21,344	33,110	60.80
2016	51,882	16,376	35,506	68.44
2017	48,823	16,136	32,687	66.95
2018	61,024	19,501	41,523	68.04

[a] As provided in Biological Opinion at Table 49, column B.
[b] As provided in Biological Opinion at Table 51, column B.
[c] As represented by the difference between columns B and C in this Table; not provided in the Biological Opinion.

Also notable from the agency's analysis was the significant contribution made by industry vessels to total ship-strike risk. Remarkably, the oil and gas industry accounted for about 34% of strike risk from all vessels and 23.5% of strike risk from vessels traveling at speeds greater than 10 knots,[32] a speed that is well associated, from multiple lines of evidence, with greater lethality to large whales.[33]

In 2022, NMFS produced a new density surface model for Rice's whale, incorporating several additional years of sightings data.[34] The new estimates do not take account of the passive acoustic data discussed above and may therefore underestimate densities within the whale's central and western Gulf habitat; nonetheless, NMFS' inclusion of additional years of sightings data has resulted in a significant increase in those latter densities. We recently commissioned an update of NMFS' analysis in the 2020 Biological Opinion, using the same methodology and the same AIS dataset, but applying the new density surface model.[35] The results both confirm and expand on NMFS' previous analysis.

The following two tables compare the strike risk attributable to the whale's DeSoto Canyon habitat area, as defined in the 2020 Biological Opinion, with the risk attributable to a broader Rice's whale habitat area, using the new density surface model. For simplicity, and consistent with the new information discussed at section II(a) above, this broader habitat area is defined as

[32] *Id.* at 358 (Table 49).

[33] *See*, *e.g.*, Vanderlaan, A.S., and Taggart, C.T., "Vessel collisions with whales: The probability of lethal injury based on vessel speed," Marine Mammal Science, vol. 23(1), pp. 144-56 (2007); Conn, P.B., and Silber, G.K., "Vessel speed restrictions reduce risk of collision-related mortality for North Atlantic right whales," Ecosphere, vol. 4(4), art. 43 (2013). The 2020 Biological Opinion, at 348-50, summarizes the evidence indicating the greater lethality risk for whales struck at higher vessel speeds.

[34] Litz, J., Dias, L.A., Rappucci, G., Martinez, A., Soldevilla, M., Garrison, L., and Mullin, K., "Cetacean and sea turtle spatial density model outputs from visual observations using line-transect survey methods aboard NOAA vessel and aircraft platforms in the Gulf of Mexico" (2022). Shapefiles are available at NOAA's National Centers for Environmental Information website.

[35] The AIS dataset used in the 2020 Biological Opinion was obtained from NMFS through a FOIA request. We will shortly provide the agency a report on this updated analysis.

waters within the 100-400m isobath, north of 25.5° N. latitude. The analysis indicates that the strike risk attributable to the DeSoto Canyon habitat area, as that area was defined in the 2020 Biological Opinion, represents, on average, only about 12.5% of the total (Table 2, column 4), or about 11.25% of the total for vessels traveling at speeds greater than 10 knots (Table 3, column 4). By contrast, the strike risk attributable to the broader habitat area, as defined above, represents, on average, about 93% of the total (Table 2, column 6), including for vessels traveling at speeds greater than 10 knots (Table 3, column 6). It is also worth observing that the updated analysis shows an appreciably greater overall strike risk for the whale than was seen in NMFS' 2020 analysis.[36]

Table 2. Strike risk for Rice's whales associated with all AIS-reported vessels transiting at all speeds through their habitat, applying the new density surface model

Year	Risk, all habitat	Risk, DeSoto habitat area[a]	% Risk, DeSoto habitat area[a]	Risk, 100-400m area[b]	% risk, 100-400m area[b]
2015	92,849	11,025	12	86,016	93
2016	85,323	10,963	13	79,186	93
2017	86,236	10,343	12	80,252	93
2018	100,326	11,956	12	93,215	93

[a] As defined in the 2020 Biological Opinion.
[b] As defined above (waters within the 100-400m isobaths, north of 25.5° N. latitude).

Table 3. Strike risk for Rice's whales associated with AIS-reported vessels transiting at speeds > 10 knots through their habitat, applying the new density surface model

Year	Risk, all habitat	Risk, DeSoto habitat area[a]	% Risk, DeSoto habitat area[a]	Risk, 100-400m area[b]	% risk, 100-400m area[b]
2015	71,621	7,842	11	66,483	93
2016	67,878	8,194	12	63,161	93
2017	68,494	7,644	11	63,856	93
2018	79,759	9,105	11	74,307	93

[a] As defined in the 2020 Biological Opinion.
[b] As defined above (waters within the 100-400m isobaths, north of 25.5° N. latitude).

In this updated analysis, the oil and gas industry continues to account for a substantial proportion of the total risk, averaging about 39.5% of the strike risk presented by all reported vessels and 32% of strike risk from vessels traveling at speeds greater than 10 knots. That contribution represents an increase over the estimate produced by NMFS, in 2020, using the prior density surface model.

[36] The strike risk is *about 69% greater*, on average, when the new density data are applied (*compare* Tab. 1, col. 2 *with* Tab. 2, col. 2), likely the result of a higher density of whales occurring in areas that see large amounts of vessel traffic.

c. Recommendation

NOAA's five-year study has demonstrated that the continental shelf break, both inside and outside of DeSoto Canyon, contains essential prey features for Rice's whale, and that the species persistently uses that habitat not only in the DeSoto Canyon, but in the central and western Gulf as well. The agency's various habitat suitability analyses provide further confirmation of the significance of the shelf break for the species. At the same time, it is clear from NMFS' 2020 analysis and our update of that analysis that vessels transiting through the whale's habitat outside the DeSoto Canyon represent a clear majority of the strike risk, almost certainly due to the larger number of such vessels.

For these reasons, **Petitioners strongly urge that NMFS extend risk-reduction measures to the whale's shelf-break habitat (i.e., waters within the 100-400m isobaths) outside the DeSoto Canyon habitat area.** This represents a change in the recommendation made in our original petition, to take account of recent science on the whale's distribution and habitat use. As discussed below, we recognize that NMFS will need to work with ports and other interested parties to implement certain of the measures we have requested, particularly the avoidance of nighttime transits.

III. Considerations relevant to the implementation of vessel-strike risk-reduction measures in Rice's whale habitat

Our petition included a number of qualifications to the risk-reduction measures we proposed, including, for example, an exception for vessels owned, operated, or under contract by the Department of Defense or Department of Homeland Security, or engaged in military operations with such vessels.[37] In this section, we present several considerations and recommendations intended to further assist the agency in the practical implementation of the proposed measures, as updated, per section II above, to include the whale's shelf-break habitat in the central and western Gulf. Specifically, we discuss the size class of vessels that should be subject to regulation, and the prohibition on nighttime vessel transits through the Rice's whale habitat area.

a. Size class of vessels subject to regulation

In the original petition, our organizations recommended that NMFS establish a speed restriction and other measures on all vessels within Rice's whale habitat, regardless of size. For the reasons below, we remain concerned about the potential contribution of smaller vessels to strike risk; at the same time, we recognize a lack of information about the relative risk presented by those vessels, as well as the potential benefits of tailoring measures for those vessels within the broader habitat area identified in the recent science. We therefore have modified our recommendations for regulation.

[37] NRDC et al., "Petition," *supra,* at 20-21.

Vessel strike can result either in "blunt force trauma," where injuries can range from superficial abrasions and contusions to lethal impact wounds resulting from contact with a non-rotating feature of the vessel; or in "propeller-induced trauma" (also termed "sharp-force trauma"), which is marked by incising wounds from contact with the sharp, rotating propeller of the vessel.[38] Observations compiled by Laist et al. (2001)[39] initially suggested that the most severe vessel-related injuries in large whales occur as a result of strikes by large ocean-going vessels, a finding that has led to a number of management actions in the United States and internationally.[40]

But in the more than two decades since Laist et al. (2001) was published, there has been increasing recognition that smaller vessels (i.e., those below 65 feet in length) can also cause lethal injury, particularly when traveling at faster speeds.[41] The NOAA Fisheries Large Whale Ship Strike Database reveals that blood was seen in the water in at least half of the cases where a vessel known to be less than 65 feet in length struck a whale, evidencing potentially serious injury.[42] Vessels between 35 and 65 feet in length were implicated in three of the four reported vessel strike events that have involved North Atlantic right whale mothers and calves since 2020.[43] And as smaller-vessel collisions with whales are under-reported, they may comprise a greater proportion of strikes than reflected in the NOAA Fisheries database.[44] Smaller vessels striking whales also pose a risk to human safety. Such vessels have suffered cracked hulls,

[38] van der Hoop, J., Barco, S.G., Costidis, A.M., Gulland, F.M., Jepson, P.D., Moore, K.T., Raverty, S. and McLellan, W.A., "Criteria and case definitions for serious injury and death of pinnipeds and cetaceans caused by anthropogenic trauma," Diseases of Aquatic Organisms, vol. 103, pp.229-264 (2013); Sharp, S.M., McLellan, W.A., Rotstein, D.S., Costidis, A.M., Barco, S.G., Durham, K., Pitchford, T.D., Jackson, K.A., Daoust, P.Y., Wimmer, T. and Couture, E.L., "Gross and histopathologic diagnoses from North Atlantic right whale Eubalaena glacialis mortalities between 2003 and 2018," Diseases of Aquatic Organisms, vol. 135, pp. 1-31 (2019).

[39] Laist, D.W., Knowlton, A.R., Mead, J.G., Collet, A.S. and Podesta, M., "Collisions between ships and whales," Marine Mammal Science, 17(1), pp. 35-75 (2001).

[40] *See, e.g.*, "Final rule to implement speed restrictions to reduce the threat of ship collisions with North Atlantic right whales," 73 Fed. Reg, 60,173 (Dec. 9, 2008); NOAA, "Channel Islands National Marine Sanctuary Whale Advisory and Voluntary Slow Speed Zone to Reduce the Impact of Ship Strikes on Whales," available at https://channelislands.noaa.gov/management/resource/ship_strikes.html (accessed Jun. 2023); Transport Canada, "Protecting North Atlantic right whales from collisions with vessels in the Gulf of St. Lawrence," available at: https://tc.canada.ca/en/marine-transportation/navigation-marineconditions/protecting-north-atlantic-right-whales-collisions-vessels-gulf-st-lawrenc (accessed Jun. 2023); Ports of Auckland, "Hauraki Gulf Transit Protocol for Commercial Shipping," available at https://www.poal.co.nz/sustain/Documents/150112-Transit%20Protocol.pdf (accessed Jun. 2023).

[41] Kelley, D.E., Vlasic, J.P. and Brillant, S.W., "Assessing the lethality of ship strikes on whales using simple biophysical models," Marine Mammal Science, vol. 37, pp.251-267 (2021).

[42] Jensen, A.S. and Silber, G.K., "Large Whale Ship Strike Database" at 12-37 (2024) (NOAA Tech. Memo. NMFS-OPR-25).

[43] 87 Fed. Reg. 46,921, 49,628 (Aug. 1, 2022). The vessels were traveling in excess of 20 knots at the time of collision. *Id.*

[44] Hill, A.N., Karniski, C., Robbins, J., Pitchford, T., Todd, S. and Asmutis-Silvia, R., "Vessel collision injuries on live humpback whales, Megaptera novaeangliae, in the southern Gulf of Maine," Marine Mammal Science, vol. 33, pp.558-573 (2017).

damage to propellers and rudders, and blown engines;[45] and passengers have been knocked off their feet or thrown from the boat upon impact with a whale.[46]

While there is clear evidence that vessels between 35 and 65 feet in length pose a risk of lethal vessel strike to large whales, that risk has not yet been empirically substantiated for Rice's whales with respect to fishing boats and various recreational craft of that size. As stated above at II(b), we know from NMFS' 2020 analysis that vessels associated with offshore oil and gas development account for a substantial proportion of total ship-strike risk for Rice's whale: 34% of strike risk from all vessels, regardless of speed, and 23.5% of strike risk from vessels traveling at speeds greater than 10 knots, with those proportions increasing to 39.5% and 32% when the new surface density model is applied. Further, NMFS' analysis shows that the vast majority of the industry's trips in the Gulf of Mexico (about 99.2%) are made by service vessels,[47] which often run smaller than 65 feet. But the relative contribution of smaller commercial fishing and recreational craft—and particularly of smaller craft traveling at speeds greater than 10 knots, which poses a greater risk of lethal strike—is unknown. It may be possible to tailor measures specific to the highest-risk vessels in the offshore habitat occupied by Rice's whale.

In consideration of these factors, we modify the recommendation made in our original petition to reflect a staged approach. **Specifically, we recommend that NMFS move forward immediately with regulations for all vessels equal to or greater than 65-feet in length, as well as for all vessels associated with the energy sector (*i.e.*, oil and gas, renewable energy). Additionally, we recommend that NMFS commit to analyzing the risk contribution of commercial fishing and recreational vessels between 35 and 65 feet, and of any other vessels of similar size that are not covered in the original regulation, within 12 months of issuance of a final rulemaking, and use the outcomes of that analysis to consider measures for such vessels, as appropriate.** An analysis of vessel strike risk should take into account vessel behavior (*e.g.*, motoring *vs*. drifting) and operating speeds of smaller commercial fishing and recreational craft during different times and when undertaking different activities.

b. Prohibition of nighttime transits through Rice's whale habitat

In our original petition, we called on NMFS to require vessels to "avoid transiting through the Vessel Slowdown Zone [i.e., that habitat area defined in our petition] at nighttime."

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[45] Jensen and Silber, "Large Whale Ship Strike Database," *supra*. In February 2021, a sportfishing vessel accidentally struck a right whale mother and calf, killing the calf and seriously injuring the mother. The vessel was damaged beyond repair, resulting in a $1.2 million total loss. K. Moore, "Florida sportfishing captain describes fatal right whale strike," National Fisherman (Feb. 17, 2022).

[46] Bigfish123, "Comment to Collision at Sea, The Hull Truth" (posted May 1, 2009, 5:44 am), available at: http://www.thehulltruth.com/boating-forum/222026-collision-sea.html (accessed Jun. 2023).

[47] NMFS, Biological Opinion, *supra*, at p. 338.

The rationale for this recommendation is clear. Tagging studies and analyses of dive behavior indicate that Rice's whale engages in a well-defined diel cycle, diving repeatedly during the day for prey that aggregate near the seafloor and then coming to the surface at night to rest when its prey disperses.[48] Importantly, the whale spends virtually the entire night—fully 88 percent of the time—within the upper 15 meters of the water column, within the draft depths of most commercial vessels. Such behavior significantly raises the risk of vessel strikes during nighttime hours.[49] For this reason, NMFS, in its 2020 Biological Opinion, required the oil and industry to completely avoid nighttime transits through Rice's whale habitat, as such habitat was defined in that document, in addition to maintaining a 10-knot speed limit, carrying observers, and meeting other conditions.[50] Reducing nighttime transits through Rice's whale habitat is essential to reducing vessel strike risk to the species.

At the same time, measures to reduce nighttime transits will need to take account of certain complexities in vessel operations, particularly for large commercial ships. For example, container and cargo ship transits are often timed to the availability of port berths and other port functions, and reducing nighttime transits of these vessels will require coordination with the ports. By contrast, as stated above, NMFS was able to apply a strict prohibition on nighttime transits of oil and gas industry vessels, pursuant to its 2020 Biological Opinion, through the whale's DeSoto Canyon habitat area.[51] We note that establishing a speed limit does not pose the same complexities for commercial shipping, and that analogous speed limits have been imposed or achieved in various regions, including along much of the U.S. east coast, without notable adverse effects on port operations or revenues.[52]

Petitioners therefore offer the following recommendations regarding the reduction of nighttime transits through the whale's shelf-break habitat.

(1) NMFS should prohibit all vessels associated with the energy sector from transiting through Rice's whale habitat at nighttime, except for emergencies concerning human life or safety, navigational safety, or harm to the environment; and should require the vessel operator to report any non-compliance and the reasons therefore to the agency within 24 hours of its occurrence.

(2) NMFS should prohibit large commercial vessels 65 feet and longer (*e.g.*, container and cargo ships) from transiting through Rice's whale habitat at nighttime, except where

[48] Soldevilla et al., "Spatial distribution," *supra*.

[49] *Id.*

[50] NMFS, Biological Opinion, *supra*, at p. 598 ("No transit at nighttime or at low visibility conditions except for emergencies when the safety of the vessel or crew is in doubt or the safety of life at sea is in question").

[51] *Id.*

[52] *See*, *e.g.*, 73 Fed. Reg. 60,173 (Oct. 10, 2008) and 78 Fed. Reg. 73,726 (Dec. 9, 2013) (regulations establishing and extending vessel-speed restrictions off the U.S. east coast for North Atlantic right whale conservation); IEc, "Economic analysis of the North Atlantic right whale vessel speed restriction rule," at 4-1 to 4-5 (2020).

necessary for berthing or to meet other port requirements. In any situation where a nighttime transit is unavoidable, the 10-knot speed restriction should apply (as it should during daylight hours as well), except for emergencies concerning human life or safety, navigational safety, or harm to the environment; and NMFS should require the vessel operator to report any such exceedance of the speed restriction, together with the reasons therefore, within 24 hours of its occurrence. Additionally, NMFS should commit to work with regional ports to reduce instances where nighttime transits through Rice's whale habitat would be necessary under this exception. RESTORE Act funds may be available to facilitate this coordination.

(3) Beginning two years after final rulemaking, NMFS should report annually on the reduction of nighttime transits through Rice's whale habitat, including on numbers of nighttime transits as indicated by AIS data and on incidents where the 10-knot speed limit for such unavoidable nighttime transits was exceeded.

We welcome further discussion about other vessel classes that do not fit into the categories above.

Conclusion

We appreciate the opportunity to express our strong support of the agency moving forward with proposed rulemaking, and to share these important updates to our original recommendations.

As the group of 100 marine scientists observed in their letter to the administration last fall, the "whales can recover. They continue to produce calves, and our experience with other baleen whales show that populations can rebound as conditions improve."[53] But significant conservation measures are urgently needed to reduce mortality risk and alleviate other major threats to the species.

Please do not hesitate to contact us if you have any questions or require further information.

Very truly yours,

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[53] P. Corkeron et al., "An Open Letter," *supra*.

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Attachment